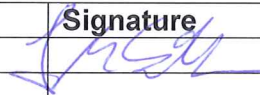
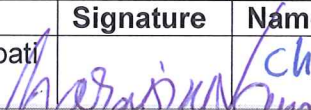
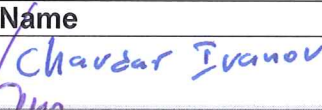

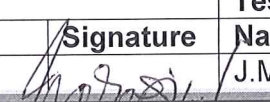
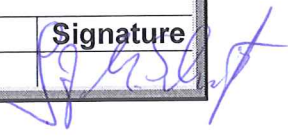


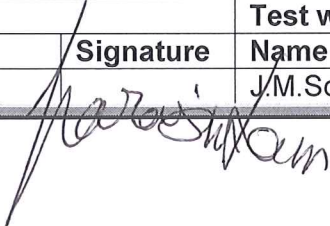
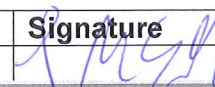
## TOOL SUMMARY FORM (PER TOOL)

Vendor/Tool: Nexant/SCOPE 12.3						Profile edition No: 2			
Witnessed by									
Name		Signature		Name		Signature			
1. J.M.Schmidt				9.					
2.				10.					
3.				11.					
4.				12.					
5.				13.					
6.				14.					
7.				15.					
8.				16.					
Performed tests									
Test No	Score	Test No	Score	Test No	Score	Test No	Score	Test No	Score
1	4								
2	4								
3	4								
4	3								
5	3								
6	1								
7	3								
8	0								
9.2	3								
10	4								
Comments:									
Date	Vendor			ENTSO-E					
July 15, 2011	Name	Signature		Name	Signature		Signature		
	Narasimham Vempati			Chardar Ivanov					

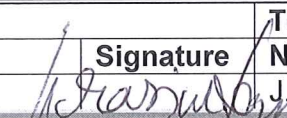
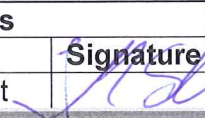
## SINGLE TEST RECORD FORM

<b>Test No:1</b>	<b>Profile edition No:2</b>	<b>Tool:SCOPE 12.3</b>	<b>Score:4</b>
<b>Test files:</b>			
<b>Import</b>		<b>Export</b>	
ENTSOE_16_BE_BND.zip containing the following files :		No export required	
ENTSOE_16_BE_EQ.xml			
ENTSOE_16_BE_SV.xml			
ENTSOE_16_BE_TP.xml			
ENTSO-			
E_Boundary_Set_28_June_2011_2ndEdition_EU_EQ.xml			
E_Boundary_Set_28_June_2011_2ndEdition_EU_TP.xml			
<b>Comments/Results/Issues:</b>			
Boundary file with Belgium data imported			
Power flow was executed			
Generator MVar limit verified			
<b>Supplementary files:</b>			
BE+BND-Bus Solution.bmp			
ENTSOE-BE+BND.xlsx			
<b>Date</b>	<b>Vendor</b>	<b>Test witness</b>	
July 11, 2011	<b>Name</b>	<b>Signature</b>	<b>Name</b>
	Narsi Vempati		J.M.Schmidt
			

## SINGLE TEST RECORD FORM

<b>Test No:2</b>	<b>Profile edition No:2</b>	<b>Tool:SCOPE 12.3</b>	<b>Score:4</b>
<b>Test files:</b>			
<b>Import</b>		<b>Export</b>	
ENTSOE_16_BE_BND.zip containing the following files :		SC_ENTSOE_16_BE_BND_out_v1.zip including	
ENTSOE_16_BE_EQ.xml		ENTSOE_16_BE_EQ.xml	
ENTSOE_16_BE_SV.xml		SV.xml	
ENTSOE_16_BE_TP.xml		ENTSOE_16_BE_TP.xml	
ENTSO-		ENTSO-	
E_Boundary_Set_28_June_2011_2ndEdition		E_Boundary_Set_28_June_2011_2ndEdition	
_EU_EQ.xml		_EU_EQ.xml	
ENTSO-		ENTSO-	
E_Boundary_Set_28_June_2011_2ndEdition		E_Boundary_Set_28_June_2011_2ndEdition	
_EU_TP.xml		_EU_TP.xml	
<b>Comments/Results/Issues:</b>			
Boundary file with Belgium data imported as in Test1. Dataset was exported. Validation with CIMDesk does not show relevant warnings or errors.			
Exported zip-file does include boundary sets which is not required.			
<b>Supplementary files:</b>			
BE+BND-Bus Solution.bmp			
ENTSOE-BE+BND.xlsx			
validation_CIMESK.docx			
<b>Date</b>	<b>Vendor</b>	<b>Test witness</b>	
July 11, 2011	<b>Name</b> Narsi Vempati	<b>Signature</b> 	<b>Name</b> J.M.Schmidt
			<b>Signature</b> 



<b>Test No: 3</b>	<b>Profile edition No: 2</b>	<b>Tool:SCOPE 12.3</b>	<b>Score: 4</b>
<b>Test files:</b>			
<b>Import</b>		<b>Export</b>	
ENTSOE_16_BE_BND.zip containing the following files :  ENTSOE_16_BE_EQ.xml ENTSOE_16_BE_SV.xml ENTSOE_16_BE_TP.xml ENTSO- E_Boundary_Set_28_June_2011_2ndEdition_EU_EQ.xml ENTSO- E_Boundary_Set_28_June_2011_2ndEdition_EU_TP.xml		Not applicable	
<b>Comments/Results/Issues:</b>			
<p>Loadflow solution compared with GE, DMS and Siemens – the results matched exactly with these vendors</p> <p>Comparison of results showed some differences. The reasons are not finally clear. The differences are noted in file "Comparison with Intercompro.xls"</p>			
<b>Supplementary files:</b>			
<p>Comparison with Intercompro.xls          Screenshot of Nexant loadflow solution - Belgium + Boundary.docx          Branch flow OUT_BRA_ENTSOE_16_BE_BND.csv          Bus OUT_BUS_ENTSOE_16_BE_BND.csv</p>			
<b>Date</b>	<b>Vendor</b>	<b>Test witness</b>	
July 14, 2011	<b>Name</b>	<b>Signature</b>	<b>Name</b>
	Narsi Vempati		J.M. Schmidt
			

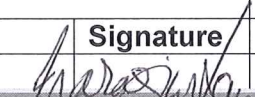
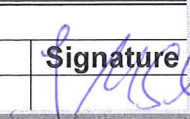
## SINGLE TEST RECORD FORM

<b>Test No:4</b>	<b>Profile edition No:2</b>	<b>Tool:SCOPE 12.3</b>	<b>Score: 3</b>
<b>Test files:</b>			
<b>Import</b>		<b>Export</b>	
ENTSOE_16_BE_BND.zip containing the following files :  ENTSOE_16_BE_EQ.xml ENTSOE_16_BE_SV.xml ENTSOE_16_BE_TP.xml ENTSO- E_Boundary_Set_28_June_2011_2ndEdition_EU_EQ.x ml ENTSO- E_Boundary_Set_28_June_2011_2ndEdition_EU_TP.x ml		SC_ENTSOE_16_BE_BND_out.zi p	
<b>Comments/Results/Issues:</b>			
Boundary file with Belgium data imported as in Test1. It is saved as PCA-file after import. Load flow is performed. Results saved. Li in operation, Voltage at BUS 1341 (G1) is 1.05 pu Changes: G1 Setpoint for Voltage from 1.05 to 1.03 pu. Switching Line "Li" off done in ASCII-file *.pca Load flow is performed. Results saved. Power Li=0, Voltage at BUS 1341 (G1) is 1.03 pu  Export is only possible with complete dataset. Incremental export is not supported.  Boundary files are included in the exported zip-files.  Zipped files have highly different size.  Only minor errors (related to records in the Boundary file) are noted in the screenshot file.			
<b>Supplementary files:</b>			
LF results with and without changes: Comparison with Topology Changes.xlsx Exported grid data as noted above under EXPORT. Screenshot of the output file validation in file NEXANT Test 4 - 2st edition.JPG.			
<b>Date</b>	<b>Vendor</b>	<b>Test witness</b>	
July 12, 2011	<b>Name</b>	<b>Name</b>	<b>Signature</b>
	Narsi Vempati	J.M.Schmidt	

<b>Test No:5</b>	<b>Profile edition No:2</b>	<b>Tool:SCOPE 12.3</b>	<b>Score: 3</b>
<b>Test files:</b>			
<b>Import</b>		<b>Export</b>	
ENTSOE_16_BE_BND.zip containing the following files :  ENTSOE_16_BE_EQ.xml ENTSOE_16_BE_SV.xml ENTSOE_16_BE_TP.xml ENTSO- E_Boundary_Set_28_June_2011_2ndEdition_EU_EQ.xml   ENTSO- E_Boundary_Set_28_June_2011_2ndEdition_EU_TP.xml 		SC_ENTSOE_16_BE_BND_out -SV Only.zip	
<b>Comments/Results/Issues:</b>			
<p>Boundary file with Belgium data imported as in Test1. It is saved as PCA-file after import. Load flow is not performed as the software does not permit changes after an initial power flow was executed.</p> <p>Changes: G1 MW changed from 90MW to 82MW.          Load L1 P changed from 200MW to 207MW. Q changed from 50MW to 43 MW in ASCII-file *.pca.</p> <p>Load flow is performed. Results saved.</p> <p>Export is only possible with complete dataset. Incremental export is not supported.</p> <p>Boundary files are included in the exported zip-files.</p> <p>Manual extraction of SV file from the exported zip file. To validate that changes are done only in SV file, imported new SV file with rest of the files from MAS.</p> <p>Load flow was run and results were as expected.</p>			
<b>Supplementary files:</b>			
Test 5 Vailidation.docx			
<b>Date</b>	<b>Vendor</b>	<b>Test witness</b>	
July 14, 2011	<b>Name</b>	<b>Name</b>	<b>Signature</b>
	Narsi Vempati	J.M.Schmidt	



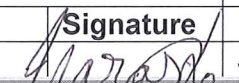

## SINGLE TEST RECORD FORM

Test No: 6	Profile edition No: 2	Tool: SCOPE 12.3	Score: 1
<b>Test files:</b>			
<b>Import</b>		<b>Export</b>	
<b>Comments/Results/Issues:</b>			
SCOPE does not yet support incremental updates to TP and SV files only (while keeping the existing EQ file).			
<b>Supplementary files:</b>			
<b>Date</b>	<b>Vendor</b>	<b>Test witness</b>	
July 11, 2011	<b>Name</b> Narsi Vempati	<b>Name</b> J.M.Schmidt	<b>Signature</b>
			

<b>Test No:7</b>	<b>Profile edition No:2</b>	<b>Tool:SCOPE 12.3</b>	<b>Score: 3</b>
<b>Test files:</b>			
<b>Import</b>		<b>Export</b>	
ENTSOE_2_BE_Siemens_SV.zip containing the ENTSOE_16_BE_EQ.xml ENTSOE_2_BE_OD_12J09h_SV.xml ENTSOE_16_BE_TP.xml ENTSO- E_Boundary_Set_28_June_2011_2ndEdition_EU_EQ.xml ENTSO- E_Boundary_Set_28_June_2011_2ndEdition_EU_TP.xml			
<b>Comments/Results/Issues:</b>			
The changes in the Siemens SV file were (i) Increase G1 MW generation from 90 to 96 and (ii) Increase L1 MW load from 200 to 206.			
The input zipped file was created manually with the above mentioned components.			
SCOPE 12.3 does not have the capability to import only a SV file at point in time.			
The load flow ran successfully and fits the results from Siemens.			
<b>Supplementary files:</b>			
Screenshot of the Nexant load flow solution : "Nexant test7 Power flow solution – Imported Siemens CV file.docx."			
Siemens solution with their SV file : "Siemens Loadflow_afterchanges.pdf".			
<b>Date</b>	<b>Vendor</b>	<b>Test witness</b>	
July 14, 2011	<b>Name</b>	<b>Name</b>	<b>Signature</b>
	Narsi Vempati	J.M.Schmidt	



## SINGLE TEST RECORD FORM

Test No: 18	Profile edition No: 2	Tool: SCOPE 12.3	Score: 0
<b>Test files:</b>			
<b>Import</b>		<b>Export</b>	
<b>Comments/Results/Issues:</b>			
SCOPE does not perform short-circuit calculations, but only Power Flow.			
<b>Supplementary files:</b>			
<b>Date</b>	<b>Vendor</b>	<b>Test witness</b>	
July 11, 2011	<b>Name</b> Narsi Vempati	<b>Name</b> J.M.Schmidt	<b>Signature</b>
			

<b>Test No:</b> 9	<b>Profile edition No:</b> 2	<b>Tool:</b> 12.3	<b>Score:</b> 3
<b>Test files:</b>			
<b>Import</b>		<b>Export</b>	
ENTSOE_E_16_FullModel.zip (for initial solution)		SC_ENTSO-E_16_FullModel_out-SV Only.zip (corresponds to ENTSOE_E_16_FullModel.zip)	
ENTSOE_E_16_FullModel_withSiemens TP and SV files from Test4.zip (contains Siemens Test 4 export of TP and SV files for Netherlands).			
<b>Comments/Results/Issues:</b>			
<p>Merging and export of only 1 SV file was performed sufficiently. TP and EQ files had to be removed manually from exported file to create the exported SV file.</p> <p>New TP and SV file from Siemens Test 4 export zip file were manually included in the zip to create ENTSOE_E_16_FullModel_withSiemens TP and SV files from Test4.zip.</p> <p>Import and loadflow were performed without problems. Loadflow solution shows differences up to 10% in reactive power flow. The reason is not clear.</p>			
<b>Supplementary files:</b>			
ODMS_S1_NL_Loadflow_after.pdf : Used to compare Nexant load flow results with Siemens results.			
OUT_BRA_ENTSO-E_16_FullModel_withSiemens TP and SV files from Test4.csv – Branch flows			
OUT_BUS_ENTSO-E_16_FullModel_withSiemens TP and SV files from Test4.csv – Bus solution			
OUT_CNV_ENTSO-E_16_FullModel_withSiemens TP and SV files from Test4.csv – Convergence log			
<b>Date</b>	<b>Vendor</b>	<b>Test witness</b>	
July 15, 2011	<b>Name</b> Narasimham Vempati	<b>Name</b> J.M. Schmidt	<b>Signature</b>

<b>Test No: 10</b>	<b>Profile edition No: 2</b>	<b>Tool: SCOPE 12.3</b>	<b>Score: 4</b>
<b>Test files:</b>			
<b>Import</b>		<b>Export</b>	
ENTSO-E_16_PF_15J08h.zip			
<b>Comments/Results/Issues:</b>			
<p>Imported the file that was exported by DigSilent from their Test 9 and run loadflow.</p> <p>Nexant's loadflow results matched DigSilent's loadflow results very well.</p>			
<b>Supplementary files:</b>			
ldfresults_sym_original.png ldfresults_tr2_original.png ldfresutls_tr3_original.png Nexant branch_solution_after_import_of_DigSilent_full_model_export.png Nexant_bus_solution_after_import_of_DigSilent_full_model_export.png			
<b>Date</b>	<b>Vendor</b>	<b>Test witness</b>	
July 15, 2011	<b>Name</b> Narasimham Vempati	<b>Name</b> J.M.Schmidt	<b>Signature</b>